Work Orde				*97	190*				5 hy	, Mo	ndan Page 1
Revision ID: Item Name:	D3201-1 Doubler			Accept	*N900	0040	100) *	Setup Star	I Z	S1* S2*
Start Date: Required Date: Reference:	2/14/13 2/28/13	Start Qty: 12.00 Req'd Qty: 12.00	1 /		Cust Item Customer						; ; ; ;
Approvals:		-	Date: /3 -0Z-7			Date:			Run Star Stop	I <i>Z</i> I	R1* R2*
Sequence ID/ Work Center II)	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	t Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Rev	ision Nbr									·
*100 *100* Waterjet FLOW CNC Waterje 2024 .040	t	FLOW WATER JET Memo 1-Cut as p Deburr if		0.00 0.00 ev: B Prog Rev:(<u>B</u> _2-			_1 <i>3</i> _	٥		<u>Jm13-</u> 5
*110 *110* QC Quality Control		QC2- Inspect parts off Memo	machine FAI/FAIB	0.00) <u> </u>		JM3-5
120 *120* QC		QC8- Inspect parts - se	econd check	0.00 BS	• • 13			12			

Quality Control

											DQA:	Date	:	
NCR:	Yes	/ No				WORK ORDER NON-	COI	NFORM	MANCE / UPDATE					
											QA Closed:	Date	:	
Work Ord	or.				•	DISPOSITION			AGAIN	AGAINST DEPARTMENT/PROCESS				
WOIK OIG	CI.		· · · · · · · · · · · · · · · · · · ·			Rework	7		Skid-tube Crosstu	be		Water Jet	Engineering	
Part I	No.					Scrap		ſ	Machining Small F	ab	Pro	d. Eng. Coor.	Quality	
	Nep v					Use-as-is]		noforming Finishi	- T	Rec/Stor	re/Packaging	Other	
NCR No.						Work Order Update]		Large Fab Compos	ite[]	Supplier		
Root					Descri	ption of work order update		Initial	Action		Sign &			
Cause		Date	Step	Qty	(or Non-conformance	Ch	ief Eng	Description		Date	Verification	QC Inspector	
Doc/Data														
Equip/Tooling							1.					i nje o		
Operator												(* c.2 · · ·		
Material													.	
Setup				٠	Section 1985		1					•		
Other														
Process				·										
Supplier						J	1							
Training														
Unapproved		3	l								<u> </u>			
							AUL	T CATE	GORY					
Landi		I				General	_	1		<u> </u>	1	_		
A.		Bending				Bend	_	Grain	•	-	Ovalized	-	Pressure/Forced	
Centre Not Concentric to O/S			o/s	BOM/Route	-	Hardwa		-	Over/Under	-	Temperature/Cure			
Cracks Crushed (Crimped			Broken/Damaged	-	4	on Incomplete	-	Part Incorre	⊢	Weld				
Crushed/Crimped.				Burrs	-	-	ions Incomplete/Unclear		Part Lost/M	issing	Wrong Stock Pulled			
•	-	Cuffs			_	Contamination	-	Mainte		" <u> </u>	Part Moved			
│				Countersink	\perp	Mislabe		<u> </u>	Positioned V					
	Inspection Strip in Tube Cut Too Short						Misread	i		Power Loss/	Surge	Other		

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

Ripples in Bend

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drill Holes

Drawing

Finish

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

February-14-13 3:03:13 PM

Item ID:

D3201-1

Accept

N900040100

Setup Start

Revision ID:

Start Date:

Item Name: Doubler

Required Date: 2/28/13

2/14/13

Start Qty: 12.00 Reg'd Qty: 12.00 *12*

Date:

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

SPC (Y/N):

Date: Date:

Start Run

Stop

Sequence ID/ Work Center ID

130

130 Small Fab

Small Fab

Operation

Description

Small Fal Debur Stack Set Up/ **Run Hours**

0.00

0.00

Tool ID

Tool# Plan Code

Accept Qty

Reject Qty

Reject Number Stamp

Insp.

140

140

HandFinish Hand Finishing

Memo

Chemical Conversion Coat per QSI005 4.1

0.00

0.00

12 & Bil 13-5-13

150

150

Quality Control

Inspect Part Finish

Memo



										DQA:	Date	e:	
NCR: Y	es / No				WORK ORDER NON-C	CONF	ORN	MANCE / UPDATE		QA Closed:	Date	2.	
	 			711-1	I .					QA Closed.	Date		
Work Orde	۳.				DISPOSITION	1	AGAINST DEPARTMENT/PROCESS						
work Orde	1				Rework	7		Skid-tube Crosstub	еП		Water Jet	Engineering	
Part N	n				Scrap	1		Machining Small Fa		Proc	l. Eng. Coor.	Quality	
, arti	··-				Use-as-is	╡╽.		noforming Finishin			e/Packaging	Other	
NCR N	0.				Work Order Update			Large Fab Composit	te 🔙		Supplier		
						$oldsymbol{\perp}$, ,	···			
Root					ption of work order update		tial	Action	ĺ	Sign &		061	
Cause	Date	Step	Qty		or Non-conformance	Chie	f Eng	Description		Date	Verification	QC Inspector	
Doc/Data									İ				
Equip/Tooling	_					l					•		
Operator	_											,	
Material	_												
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Other Process							•						
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Training						1							
Unapproved													
1		<u> </u>			F	AULT	CATE	GORY					
Landir	ng Gear				General						-		
. [Bending				Bend		irain			Ovalized		Pressure/Forced	
	Centre N	ot Conce	ntric to (o/s	BOM/Route	Шн	lardwa	re		Over/Under	<u>+</u>	Temperature/Cure	
	Cracks				Broken/Damaged	Ir	nspecti	ion Incomplete		Part Incorred	⊢	Weld	
	Crushed/	Crimped			Burrs	-		ions Incomplete/Unclear		Part Lost/Mi	ssing [Wrong Stock Pulled	
	Cuffs				Contamination			enance		Part Moved			
	Heat Trea				Countersink	\vdash	∕lislabe			Positioned V		-	
	Inspection Strip in Tube Cut Too Short			4	\vdash	⁄lisread			Power Loss/	Surge [Other		
	Ripples in Bend Drill Holes				\vdash	Offset							
	Torque W			ո _	Drawing	\vdash		Calibration					
ļ	Turning Sequence Finish					\vdash		Sequence					
i	Wave/Twist in Tube Folio					Outside Dimensions							

Quality Control

Page 3

February-14-13 3:03:13 PM D3201-1 Item ID: Accept *N900040100* Setup Start **Revision ID:** Item Name: Doubler **Start Date:** 2/14/13 **Start Qty: 12.00 Cust Item ID:** Required Date: 2/28/13 Req'd Qty: 12.00 **Customer:** Reference: Run Approvals: Process Plan: Date: **Tooling:** Date: Stop QC: ____ Date: _____ SPC (Y/N): Date: Sequence ID/ Operation Set Up/ Tool ID Tool # Plan Accept Reject Reject Insp. **Work Center ID** Description **Run Hours** Number Code Qty Qty Stamp 160 Identify as per dwg & Stock Location: 57033 0.00 *160* Packaging 0.00 Memo Packaging 170 QC21- Final Inspection - Work Order Release 0.00 *170* QC 0.00 Memo

											DQA:	Date	:	
NCR:	Yes	/ No				WORK ORDER NON-O	COI	NFORM	AANCE / UPDA			_		
											QA Closed:	Date	:	
Work Ord	or:					DISPOSITION				AGAINST DE	PARTMENT	ARTMENT/PROCESS		
WOIK OIU	٠			·	· · · · · · · · · · · · · · · · · · ·	Rework		Skid-tube	Crosstube		Water Jet	Engineering		
Part I	No.					Scrap	1		Machining	Small Fab	Pro	d. Eng. Coor.	Quality	
	•					Use-as-is	1	Therm	noforming	Finishing	Rec/Stor	e/Packaging	Other	
NCR I	NCR No.					Work Order Update]		Large Fab (Composite		Supplier		
Root					Descri	tion of work order update	П	Initial	Action	n	Sign &		T	
Cause		Date	Step	Qty	C	or Non-conformance	Ch	nief Eng	Descript	tion	Date	Verification	QC Inspector	
Doc/Data														
Equip/Tooling														
Operator							1							
Material							l		·					
Setup														
Other														
Process														
Supplier			1				İ							
Training														
Unapproved	П		į											
						F	AUI	LT CATE	GORY					
Landi	ing (Gear				General		-			•	-		
		Bending				Bend		Grain			Ovalized		Pressure/Forced	
		Centre N	ot Conce	ntric to (D/S	BOM/Route		Hardwa	re		Over/Under	tolerance	Temperature/Cure	
	Cracks			,		Broken/Damaged		Inspecti	on Incomplete		Part Incorre	ct	Weld	
		Crushed/	Crimped			Burrs		Instruct	ions Incomplete/Und	clear	Part Lost/Mi	issing	Wrong Stock Pulled	
		Cuffs				Contamination		Mainte	nance		Part Moved			
		Heat Trea	at			Countersink		Mislabe	led		Positioned V	Vrong		
	Inspection Strip in Tube Cut Too				Cut Too Short		Misread	I		Power Loss/	Surge	Other		
	Ripples in Bend Drill Holes					Drill Holes		Offset	•					

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Picklist Print

February-14-13 10:52:59 AM

Work Order ID:

97190

Parent Item:

D3201-1

Parent Item Name:

Doubler

Start Date: 2/14/13

Required Date: 2/28/13

Page 1

Start Qty: 12.00

Required Qty: 12.00

Comments:

IPP Rev:A

Removed from 9 Digit 06-01-25 JLM

IPP Rev:B Now on Wateriet

06-08-14 JLM

	IPP Rev:B Nov	won waterjet	00-08-	14 JLIVI									
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M2024T3S.040 2024-T3 .040 sheet		Purchased	No			100	sf	219.2877	0.276	3.4863156		- 1	JM13-5-11
2024-13 .040 SHEEL				<u>Location</u>		Loc Qty	<u>Lo</u>	c Code			. 		
				MAT022		219.2876922							
				120	605	65.8254832							
				121	197	57.187894							
				122	136	31.78							

64.494315

123217

									DQA.		
NCR: Yes	/ No				WORK ORDER NON-C	CONFORM	MANCE / UPD		QA Closed:	: Date:	
Work Order:					DISPOSITION			AGAINST DE	PARTMENT	PROCESS	
•					Rework	1 1	Skid-tube	Crosstube		Water Jet	Engineering
Part No.					Scrap]	Machining	Small Fab		od. Eng. Coor.	Quality
					Use-as-is	Thern	noforming	Finishing	Rec/Sto	re/Packaging	Other
NCR No.					Work Order Update]	Large Fab	Composite		Supplier	
Root				Descri	ption of work order update	Initial	Actio	on	Sign &		,
Cause \	Date	Step	Qty	(or Non-conformance	Chief Eng	Descri	ption	Date	Verification	QC Inspec
Doc/Data											
Equip/Tooling											
Operator											

Unapproved **FAULT CATEGORY Landing Gear** General Grain Ovalized Pressure/Forced Bend Bending Temperature/Cure Over/Under tolerance BOM/Route Centre Not Concentric to O/S Hardware Part Incorrect Weld Broken/Damaged Inspection Incomplete Cracks Wrong Stock Pulled Part Lost/Missing Crushed/Crimped Instructions Incomplete/Unclear Burrs Part Moved Maintenance Cuffs Contamination Positioned Wrong Mislabeled Heat Treat Countersink Power Loss/Surge Other Misread Inspection Strip in Tube Cut Too Short Drill Holes Offset Ripples in Bend Drawing Out of Calibration Torque Waves in Extrusion Out of Sequence Turning Sequence Finish Outside Dimensions Folio Wave/Twist in Tube

DOA

Date

QC Inspector

Material Setup Other Process Supplier Training

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

DART AEROSPACE LTD	Work Order:	97190
Description: Doubler	Part Number:	D3201-1
Inspection Dwg: D3201 Rev: B		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

X First Article	Prototype
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Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
R0.50	+/-0.030	0.20,	_		RG	
3.57	+/-0.030	3.571"	_		V	Jenoi
R0.12	+/-0.030	0.12"			RG	
8.00	+/-0.030	7.990			ν	
0.58	+/-0.030	0.573	_		V	
4.89	+/-0.030	4.885"	<u>_</u>		. •	
R0.25	+/-0.030	0.25	-		RG	
0.040	+/-0.010	0.039"	_			
		•				

Measured by:	Audited by:	Prototype Approval:	N/A
Date: 13-5-11	Date: 15525	Date:	N/A

Rev	Date	Change		Revised by	Approved
Α	03.11.28	New Issue	P/O D412-698-015	KJ/RF	14





DESIG	*#-	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHEC	(ED _A i	APPROVED	DRAWING NO. RE	V. B
	-#-	-	D3201 SHEET 1	OF 1
DATE			TITLE S	CALE
 03.1	1.03		DOUBLER	1:2
Α		03.08.07	NEW ISSUE	
В		03.11.03	MODIFY D3201-1, ADD D3201-3/-4	



R0.50 2.95 -(2 PLACES) 3.76 R_{0.12} 3.46 (TYP) 3.57 **GRAIN** 1.68 **DIRECTION** R_{0.12} D3201-3/-4 ANGLE (FLAT PATTERN) 8.00 - 0.58 0.90 -0.90 R0.13 · D3201-3 ANGLE (SHOWN) 4.89 -R0.25 D3201-4 ANGLE (BEND OPPOSITE) (3 PLACES) 0.050 THICK D3201-1 DOUBLER 0.040 THICK

D3201-1/-3/-4 DOUBLER

- 1) MACHINE PARTS PER DWG FILE "D3201-B1.DWG"
- 2) MATERIAL: 2024-T3 ALUMINUM SHEET (QQ-A-250/4) (REF. DART SPEC M2024T3S)
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 5) ALL DIMENSIONS ARE IN INCHES

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